DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
X	X	X	X	X	X

REGISTERED CIVIL ENGINEER — DATE X

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. X — Exp. X — CIVIL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

TANGENT POLE WITHOUT ATTACHMENTS

BUNDLE TYPE	MAXIMUM MESSENGER WIRE SPAN	MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"
1	50′	2	9′
	100′	H-1	10′
	150′	H-3	10′
2	50′	1	9′
	100′	H-2	10′
	150′	H-4	11′

DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

GROUP LOAD COMBINATIONS:

I Dead Load
II Dead Load + Wind Load
III Dead Load + 0.5 (Wind Load) + Ice Load
IV Fatigue: Not used

LOADING:

Wind Loading: 100 mph (3-second gust)
Wind Recurrence Interval: 10 years
Combined height, exposure, and elevated terrain factor = 1.05
(Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on bundles

BASIC DESIGN VALUES:

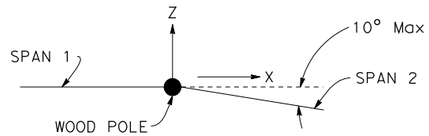
Timber Poles: Fb = 1850 psi
Fv = 110 psi
Fcp = 230 psi
Fc = 950 psi
E = 1500 x 10^3 psi

WIRE BREAKING STRENGTHS:

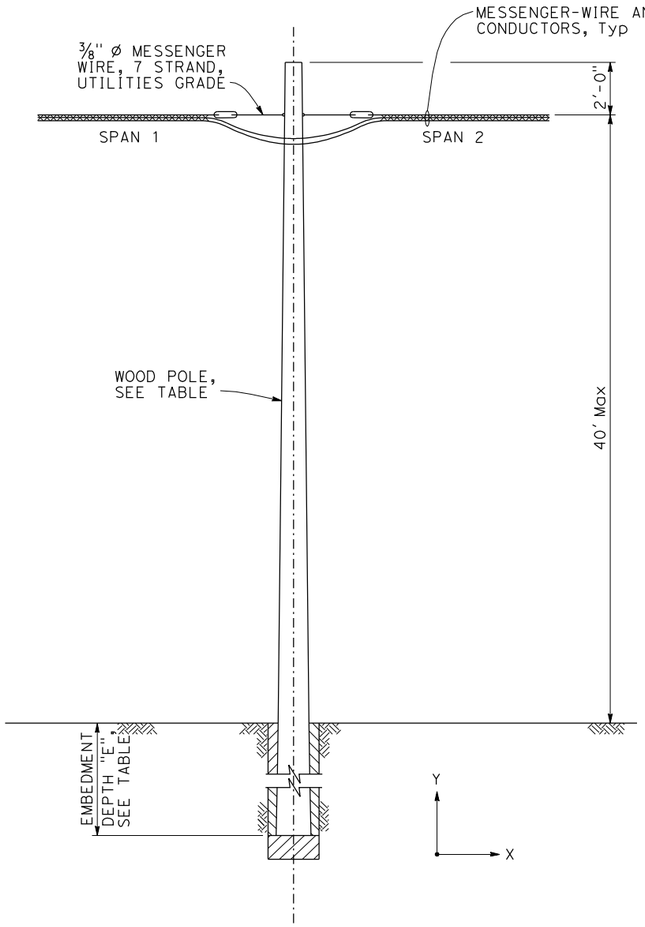
ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

DESIGN FOUNDATION DESIGN NOTES:

1. Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
2. Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H).
3. Embedment depth is calculated based on following soil parameters,
   Cohesive Soil:
   Shear strength of soil c = 1500 psf.
   Cohesionless Soil:
   ø = 30 deg, γ = 120 pcf.
   Soil is assumed to be unsaturated.
4. An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
5. If pole is located on or near a steep slope (up to 1H:2V) add 2 feet extra embedment.
6. Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.



PLAN



ELEVATION

NO SCALE

NOTES:

1. Attachments not allowed.
2. Shorter span length must be at least 95% of longer span length.
3. Bundle for Span 1 and Span 2 must be the same.

STANDARD DRAWING

FILE NO. xs18-020

APPROVAL DATE December 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. X

POST MILE X

TEMPORARY WOOD POLE
TANGENT POLE WITHOUT ATTACHMENTS

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X
CONTRACT NO.: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET X | OF X

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

FILE => $REQUEST